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10/506,848

09/03/2004

Miyuki Okada

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EXAMINER

HOLT, DAVID L

ART UNIT

PAPER NUMBER

2609

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/506,848

Applicant(s)

OKADA ET AL.

Examiner

David Holt

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 09/03/2004, 08/07/2006.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1 and 2 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1 and 2, the phrase "vice versa" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 6 rejected under 35 U.S.C. 103(a) as being unpatentable over Sekine (EU 0410419 B1), in view of Enomoto (US 7245319).

Claim 1, as best understood, has the following limitations, taught by Sekine:

- a camera lens (image pickup optical system 102, Fig. 4)
- image pickup means for converting image light passing through said camera lens into an electric image signal (image pickup elements 104-106, Fig. 4)

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- camera-signal processing means for processing said image signal (image shift circuits 107-109)
- chromatic signal converting means for converting an output signal from said camera-signal processing means into at least three primary color signals or vice versa (color dividing prism 103, Fig. 4. Furthermore "Such image shift means can also be realized in a color camera of the one plate type. That is, the image is read out by a conventional method, whereafter the image is divided into color lights R, G and B, which are input to the image shift circuits 107-109 of FIG. 1 and image shift is effected therein, whereby a similar effect can be obtained;" column 6, lines 20-26)
- detection means for detecting a driving state of said camera lens and an amount of camera shake correction (deflection angle detector 111, focal length detector 112, and camera angle detector 113; Fig. 4)
- and control means for controlling a changing coefficient of enlargement or reduction and an optical axis centered coordinate used in said resolution changing means depending on a detected output from said detection means (Calculation circuit 116, Fig. 4)

Sekine does not teach a resolution changing means for enlarging or reducing a picture of each color of said primary color signals. Enomoto, who teaches a lens characteristic correction unit, does teach this limitation. In reference to Fig. 2, Enomoto teaches a characteristic correction unit 36 which contains an interpolation processing unit 36b which is capable of electronically enlarging or reducing each color component in order to correct chromatic aberration of magnification and the distortion aberration. This

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system includes a coordinate transformation processing unit 36a, which already calculates and corrects pixel position deviation due to chromatic aberration, could be integrated into the image shift circuits 107-109 taught by Sekine without significant change to the image stabilization photographing apparatus.

At the time the invention was made it would have been obvious to one of ordinary skill in the art to combine the image stabilization photographing apparatus taught by Sekine with the characteristic correction unit 36 taught by Enomoto, because all normal camera lenses produce some degree of chromatic aberration, and by adding the characteristic correction functionality into the image shift circuits this aberration will be corrected without the use of expensive optical systems.

Claim 6, a chromatic aberration correcting method, has the following components, taught by Sekine:

- a camera lens (image pickup optical system 102, Fig. 4)
- image pickup means for converting image light passing through said camera lens into an electric image signal (image pickup elements 104-106, Fig. 4)
- and camera-signal processing means for processing said image signal (image shift circuits 107-109)
- wherein an output signal from said camera-signal processing means is converted into at least three primary color signals (color dividing prism 103, Fig. 4. Furthermore "Such image shift means can also be realized in a color camera of the one plate type. That is, the image is read out by a conventional method, whereafter the image is divided into color lights R, G and B, which are input to the image shift circuits 107-

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109 of FIG. 1 and image shift is effected therein, whereby a similar effect can be obtained;" column 6, lines 20-26)

- and a driving state of said camera lens and an amount of camera shake correction are detected to control a conversion coefficient of said enlargement or reduction and an optical axis centered coordinate depending on the detected output (deflection angle detector 111, focal length detector 112, and camera angle detector 113; Fig. 4. Which are used in calculation circuit 116, Fig. 4)

Sekine does not teach the following limitation, but, furthermore, Enomoto does:

- a picture of each color of said primary color signals is enlarged or reduced (characteristic correction unit 36, Fig. 2)
3. Claims 2, 3, 7, and 8 rejected under 35 U.S.C. 103(a) as being unpatentable over Sekine (EU 0410419 B1), in view of Enomoto (US 7245319) and Kobayashi et al. (US 5274457).

Claim 2, as best understood, further comprises the following limitations, taught by Sekine:

- signal conversion means for converting an output signal from said resolution changing means into an image signal for outputting to the outside or for recording, or vice versa (encoder 110, Fig. 4)

Sekine does not teach an outside outputting means for outputting said image signal to be output to the outside and/or recording and reproducing means for recording said image signal to be recorded in a recording medium or reproducing the same signal from the recording medium. Though storage means located within a camera are commonly

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known throughout the art, Sekine doesn't teach any details of this. Kobayashi, who teaches a removable recording means, provides these details. Kobayashi discloses, in Fig. 1, an additional information recording and reproducing circuit 15. This circuit meets the claim limitation when coupled to the composite color output taught by Sekine in Fig.

4.

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to combine the image stabilization photographing apparatus taught by Sekine with the recording and reproducing circuit taught by Kobayashi, because, in regards to advancing technology in the camera art, "it is not possible to establish a plurality of specifications forecasting possible development of elements in advance, and it does not provide any merit to a user who has bought a product of a preceding specification to re-examine and revise a specification so as to assure the high order compatibility each time an element is developed." In other words, the recording and reproducing circuit allows for the reproduction of images taken and stored under different specifications based on the additional information it allows to be stored in the storage medium along with the image itself.

Claim 3 adds the further limitation, furthermore taught by Kobayashi, wherein:

- the output signal from said camera-signal processing means is recorded in said recording medium by said recording and reproducing means (additional information recording and reproducing circuit 15, Fig. 1)
- and information on the driving state of said camera lens and the amount of camera shake correction that are detected by said detection means when taking a picture is

recorded in said recording medium together with the output signal from said camera-signal processing means (The purpose of the additional information recording and reproducing circuit 15 taught by Kobayashi is to store additional information in memory detected during the image storing process. The information detected by the photographing apparatus taught by Sekine includes deflection angle information, focal length information, and camera angle information.)

Claim 7 adds the following limitations, taught by Sekine:

- an output signal from said resolution changing means is converted into an output signal to be output to the outside or an image signal to be recorded (encoder 110, Fig. 4)

Sekine does not teach the following limitation, but, furthermore, Kobayashi does:

- and said image signal to be output to the outside is output and/or said image signal to be recorded is recorded in a recording medium (additional information recording and reproducing circuit 15)

Claim 8 adds the following limitations, taught, furthermore, by Kobayashi:

- an output signal from said camera-signal processing means is recorded in said recording medium (additional information recording and reproducing circuit 15, Fig. 1)
- and information on the driving state of said camera lens and the amount of camera shake correction that are detected when taking the picture is recorded in said recording medium together with said output signal (The purpose of the additional information recording and reproducing circuit 15 taught by Kobayashi is to store

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additional information in memory detected during the image storing process. The information detected by the photographing apparatus taught by Sekine includes deflection angle information, focal length information, and camera angle information.)

4. Claims 4 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekine (EU 0410419 B1), in view of Enomoto (US 7245319) and Hieda et al. (US 6380974).

Claim 4 further comprises the following limitation, taught, furthermore, by Enomoto:

- a user interface for arbitrarily setting said conversion coefficient of enlarging or reducing and said optical axis centered coordinate is provided in said control means (Enomoto teaches that "the lens characteristics corresponding to lens data are stored for every usable interchangeable lens;" column 6, lines 47-49. "Low-price" lenses, which Enomoto teaches is a main target of his invention, would not have their characteristics stored in the lens, so it is therefore inherent that a user could input these characteristics for use in the correction process.)

Enomoto does not teach the following limitations, but Hieda, who teaches selectors in a digital video apparatus which decrease the number of components and facilitate connection with a digital VTR, does:

- selector switch means for switching between the output signal from said camera-signal processing means, and an image signal from arbitrary external input means or recording and reproducing means (selectors 211 and 212, Fig. 8A)

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- wherein a signal from said selector switch means is supplied to said chromatic signal converting means (Hieda teaches that these switches are connected to the electronic zoom circuit. Likewise, according to Hieda's stated purpose, these switches would route the external input to the characteristic correction unit 36 taught by Enomoto.)

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to combine the photographing apparatus taught by Sekine with the selectors taught by Hieda, because "in conventional image pickup recording apparatuses adopting a digital signal processing system, an image pickup signal processing circuit is an analog circuit, and an output signal from the analog processing circuit is converted into a digital signal. For this reason, due to a large circuit scale, the number of components becomes large, and current consumption undesirably increases. Also, it is difficult to make the apparatus compact, and to reduce cost." It is, therefore, advantageous to have a single apparatus that house all of the processing components and allow for external input of other sources to utilize these components. This will cut down on the size and cost of processing.

Claim 9 adds the following limitation taught by Enomoto:

- the picture of each color of said primary color signals is enlarged or reduced, and said conversion coefficient of enlargement or reduction and said optical axis centered coordinate are arbitrarily set (Enomoto teaches that "the lens characteristics corresponding to lens data are stored for every usable interchangeable lens;" column 6, lines 47-49. "Low-price" lenses, which Enomoto

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teaches is a main target of his invention, would not have their characteristics stored in the lens, so it is therefore inherent that a user could input these characteristics for use in the correction process.)

Enomoto does not teach the following limitations, but, furthermore, Hieda does:

- selector switch means for switching between the output signal from said camera-signal processing means, and an image signal from an arbitrary external input or recording medium (selectors 211 and 212, Fig. 8A)
- wherein a signal from said selector switch means is converted into at least three primary color signals (Hieda teaches that these switches are connected to the electronic zoom circuit. Likewise, according to Hieda's stated purpose, these switches would route the external input to the characteristic correction unit 36 taught by Enomoto.)

5. Claims 5 and 10 rejected under 35 U.S.C. 103(a) as being unpatentable over Sekine (EU 0410419 B1), in view of Enomoto (US 7245319), Kobayashi et al. (US 5274457), and Hieda et al. (US 6380974).

Claim 5 adds the following limitation, furthermore taught by Kobayashi:

- information on the driving state of said camera lens and the amount of camera shake correction that are detected by said detection means when taking a picture is recorded in the recording medium reproduced by said recording and reproducing means together with said image signal (The purpose of the additional information recording and reproducing circuit 15 taught by Kobayashi is to store additional information in memory detected during the image storing process. The information

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detected by the photographing apparatus taught by Sekine includes deflection angle information, focal length information, and camera angle information.)

Kobayashi does not teach the following limitation, but, furthermore, Enomoto does:

- and the conversion coefficient of enlargement or reduction and the optical axis centered coordinate used in said resolution changing means are controlled depending on said information reproduced by said recording and reproducing means ("The interpolation processing unit 36b calculates the image data of which the chromatic aberration of magnification and the distortion aberration are corrected by executing a data interpolating process;" column 5, lines 56-59)

Claim 10 adds the following limitation, furthermore taught by Kobayashi:

- the information on the driving state of said camera lens and the amount of camera shake correction that are detected when capturing an image signal is recorded in said recording medium together with said image signal (The purpose of the additional information recording and reproducing circuit 15 taught by Kobayashi is to store additional information in memory detected during the image storing process. The information detected by the photographing apparatus taught by Sekine includes deflection angle information, focal length information, and camera angle information.)

Kobayashi does not teach the following limitation, but, furthermore, Enomoto does:

- and said conversion coefficient of the enlargement or reduction and said optical axis centered coordinate are controlled depending on said information reproduced ("The interpolation processing unit 36b calculates the image data of which the chromatic

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aberration of magnification and the distortion aberration are corrected by executing a data interpolating process;" column 5, lines 56-59)

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kingetsu et al. (US 7239342) teach an image processing apparatus that has all the components of the claimed invention, but was filed after the effective filing date of the examined application. Okada (US 5502484) teaches the combination of hand shake correction with electronic zoom, but does not discuss its use for the correction of chromatic aberration.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Holt whose telephone number is (571) 270-3227. The examiner can normally be reached on Monday - Friday, 7:30 a.m. - 4:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Ho can be reached on (571) 272-7365. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DLH 08/09/2007



TUAN HO
PRIMARY EXAMINER